

Amendment  
Serial No.09/192,674

Docket No.PHN16,762A

**IN THE CLAIMS:**

**Kindly replace the claims of record with the following full set of claims:**

1. (Currently amended) A method of motion-compensated predictive image encoding, comprising the steps of:

estimating (ME) first motion vectors (MVc, MVL, MVr, MVa, MVb) associated with a set of for the first objects of a fixed size (16\*16), said motion vectors MVL, MVr, MVa, MVb being associated with first objects adjacent to a first object associated with the MVc motion vector;

filtering (MVPF) every occurrence of said first motion vectors (MVc, MVL, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects having a fixed size (8\*8), said second objects (8\*8) being smaller than said first objects fixed size (16\*16);

generating (3) prediction errors in dependence on said second motion vectors (MV1, MV2, MV3, MV4) only; and

combining (VLC) said first motion vectors (MVc, MVL, MVr, MVa, MVb) and said prediction errors.

2. (Currently amended) A method as claimed in claim 1, wherein said first objects (16\*16) are macro-blocks having a fixed size of (16\*16) pixels, said second objects (8\*8) are blocks having a fixed size of (8\*8) pixels and said filtering step (MVPF) comprises the steps of:

providing x and y motion vectors components of a given macro-block (MVc) and of macro-block (MVL, MVr, MVa, MVb) adjacent to said given macro-block (MVC); and

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supplying for each block (MV1) of a number of blocks (MV1-MV4) corresponding to said given macro-block (MVc), x and y motion vector components respectively selected from said x and y motion vector components of said given macro-block (MVc) and from the x and y motion vector components of two blocks (MVl, MVa) adjacent to said block (MV1).

3 (Currently amended) A device for motion-compensated predictive image encoding comprising:

means for ~~estimating (ME) first motion vectors (MVc, MVl, MVr, MVa, MVb) for first objects (16\*16)~~ estimating (ME) first motion vectors (MVc, MVl, MVr, MVa, MVb) associated with a set of for the first objects of a fixed size (16\*16), said motion vectors MVl, MVr, MVa, MVb being associated with first objects adjacent to a first object associated with the MVc motion vector;

means for filtering (MVPF) every occurrence of said first motion vectors (MVc, MV1, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for second objects having a fixed size (8\*8), said second objects (8\*8) being smaller than said first objects fixed size (16\*16);

means for generating (3) prediction errors in dependence on said second motion vectors (MV1, MV2, MV3, MV4) only; and

means for combining (VLC) said first motion vectors (MVc, MVl, MVr, MVa, MVb) and said prediction errors.

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4. (Currently amended) A method of motion-compensated predictive decoding, comprising the steps of:

generating ( $VLC^{-1}$ ) first motion vectors ( $MV_c$ ,  $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$ ) and prediction errors from an input bit-stream, said first motion vectors ( $MV_c$ ,  $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$ ) relating to first objects of a fixed size (16\*16), and said motion vectors  $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$  being associated with first objects adjacent to a first object associated with the  $MV_c$  motion vector, and said prediction errors related to second objects having a fixed size (8\*8), smaller than said first objects fixed size only;

filtering (MVPF) every occurrence of said first motion vectors ( $MV_c$ ,  $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$ ) to obtain second motion vectors ( $MV_1$ ,  $MV_2$ ,  $MV_3$ ,  $MV_4$ ) for said second objects (8\*8) ~~said second objects (8\*8) being smaller than said first objects (16\*16);~~ and generating (15, MC) an output signal in dependence on said prediction errors and said second motion vectors ( $MV_1$ ,  $MV_2$ ,  $MV_3$ ,  $MV_4$ ).

5. (Currently amended) A method as claimed in claim 4, wherein said first objects ~~(16\*16)~~ are macro-blocks having a fixed size of (16\*16) pixels, said second objects ~~(8\*8)~~ are blocks having a fixed size of (8\*8) pixels, and said filtering step (MVPF) comprises the steps of:

providing x and y motion vectors components of a given macro-block ( $MV_c$ ) and of macro-block ( $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$ ) adjacent to said given macro-block ( $MV_c$ ); and supplying for each block ( $MV_1$ ) of a number of blocks ( $MV_1$ - $MV_4$ ) corresponding to said given macro-block ( $MV_c$ ), x and y motion vector components respectively selected from said x and y motion vector components of said given macro-block ( $MV_c$ ) and from

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the x and y motion vector components of two blocks (MV1, MVa) adjacent to said block (MV1).

6. (Currently amended) A device for motion-compensated predictive decoding, comprising:

means for generating ( $VLC^{-1}$ ) first motion vectors (MVc, MVL, MVr, MVa, MVb) and prediction errors from an input bit-stream, said first motion vectors (MVc, MVL, MVr, MVa, MVb) relating to first objects of a fixed size (16\*16), said motion vectors MVL, MVr, MVa, MVb being associated with first objects adjacent to a first object associated with the MVc motion vector, and said prediction errors related to second objects (8\*8) only;

means for filtering (MVPF) every occurrence of said first motion vectors (MVc, MVL, MVr, MVa, MVb) to obtain second motion vectors (MV1, MV2, MV3, MV4) for said second objects having a fixed size (8\*8), said second objects (8\*8) being smaller than said first objects fixed size (16\*16); and

means for generating (15, MC) an output signal in dependence on said prediction errors and said second motion vectors (MV1, MV2, MV3, MV4).

7. (Previously presented) A multi-media apparatus, comprising:

means (T) for receiving a motion-compensated predictively encoded image signal; and

a motion-compensated predictive decoding device as claimed in claim 6 for generating a decoded image signal.

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8. (Previously presented) An image signal display apparatus comprising:

means (T) for receiving a motion-compensated predictively encoded image signal;

a motion-compensated predictive decoding device as claimed in claim 6 for generating a decoded image signal; and

means (D) for displaying said decoded image signal.

9. (Currently amended) A method for generating a motion-compensated predictively encoded image signal, comprising:

estimating first motion vectors ( $MV_c$ ,  $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$ ) related to first objects of size  $(16 \times 16)$  pixels; obtaining second motion vectors ( $MV_1$ ,  $MV_2$ ,  $MV_3$ ,  $MV_4$ ) for second objects of size  $(8 \times 8)$  pixels from said first motion vectors ( $MV_c$ ,  $MV_l$ ,  $MV_r$ ,  $MV_a$ ,  $MV_b$ ) and generating prediction errors relating to every occurrence of second objects  $(8 \times 8)$ , ~~said second objects  $(8 \times 8)$  being smaller than said first objects  $(16 \times 16)$ ,~~ wherein said prediction errors depend on said second motion vectors ( $MV_1$ ,  $MV_2$ ,  $MV_3$ ,  $MV_4$ ) only.